Chapter: 20

State(s): Washington

Recovery Unit Name: Lower Columbia

Region 1
U.S. Fish and Wildlife Service
Portland, Oregon

DISCLAIMER

Recovery plans delineate reasonable actions that are believed necessary to recover and/or protect the species. Recovery plans are prepared by the U.S. Fish and Wildlife Service and, in this case, with the assistance of recovery unit teams, State and Tribal agencies, and others. Objectives will be attained and any necessary funds made available subject to budgetary and other constraints affecting the parties involved, as well as the need to address other priorities. Recovery plans do not necessarily represent the views or the official positions or indicate the approval of any individuals or agencies involved in the plan formulation, other than the U.S. Fish and Wildlife Service. Recovery plans represent the official position of the U.S. Fish and Wildlife Service *only* after they have been signed by the Director or Regional Director as *approved*. Approved recovery plans are subject to modification as dictated by new findings, changes in species status, and the completion of recovery tasks.

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LOWER COLUMBIA RECOVERY UNIT CHAPTER OF THE BULL TROUT RECOVERY PLAN

EXECUTIVE SUMMARY

CURRENT SPECIES STATUS

The Fish and Wildlife Service issued a final rule listing the Columbia River and Klamath River populations of bull trout (*Salvelinus confluentus*) as a threatened species under the Endangered Species Act on June 10, 1998 (63 FR 31647). The Columbia River Distinct Population Segment is threatened by habitat degradation and fragmentation, blockage of migratory corridors, poor water quality, and past fisheries management practices such as the introduction of nonnative species.

The Lower Columbia Recovery Unit Team identified two core areas (Lewis and Klickitat rivers) within the recovery unit. The Lewis Core Area includes the mainstem Lewis River and tributaries downstream to the confluence with the Columbia River, with the exclusion of the East Fork of the Lewis River. The Klickitat Core Area includes all tributaries downstream to the confluence with the Columbia River. Based on survey data and professional judgement**,** the Lower Columbia Recovery Unit Team has also identified local populations of bull trout within the core areas. Local populations within the Lower Columbia Recovery Unit are currently contained in Cougar, Pine, and Rush creeks (Lewis River), and in the West Fork of the Klickitat River. While no local populations within the White Salmon River have been identified, this system contains core habitat, and after reconnection with the Columbia River could support bull trout.

Historically, bull trout may have inhabited areas within the Cowlitz and Kalama rivers, but current distribution within the basin is unknown. The Cowlitz and Kalama rivers are considered research needs and additional information is required to determine if each respective system is important for bull trout recovery.

Fluvial bull trout in the Lower Columbia Recovery Unit, could have migrated seasonally from tributaries downstream into the Columbia River to overwinter and feed. Bull trout in other Columbia River tributaries (*e.g.*, Hood and Wenatchee rivers) are known to migrate downstream to the mainstem Columbia River as part of their normal life history strategies. However, the extent to which bull trout in the Lower Columbia Recovery Unit currently use the mainstem Columbia River is unknown. The Lower Columbia Recovery Team considers the mainstem Columbia River to contain core habitat which may be important for full recovery to occur. Studies designed to verify bull trout abundance, spatial distribution, and temporal use of the mainstem Columbia River are considered a primary research need.

Key information gaps that need to be addressed in the Lower Columbia Recovery Unit include: (1) specific information on the suitability of potential spawning and rearing areas in each basin, (2) increased inventory in each basin to establish the current distribution, and (3) a complete limiting factors analysis to identify site specific actions needed to recover bull trout within each system. Information from each of these tasks is essential in order to define the recovered distribution and abundance in each basin. The Lower Columbia Recovery Unit Team believes that it is essential that these efforts be coordinated with local government entities and watershed councils.

HABITAT REQUIREMENTS AND LIMITING FACTORS

A detailed discussion of bull trout biology and habitat requirements is provided in Chapter 1 of this recovery plan. The limiting factors discussed here are specific to the Lower Columbia Recovery Unit Chapter. Within the Lower Columbia Recovery Unit, historic and current land use activities have impacted bull trout local populations. Dams have fragmented bull trout habitat, isolated local populations, and prevented access to historical foraging and overwintering habitat. Forest management activities have altered habitat conditions in portions of the recovery unit; impacts to bull trout result from impassable culverts, excessive erosion and sedimentation, reduced recruitment of large woody debris, channel changes, and altered water temperatures, instream flow, and runoff

patterns. Grazing has resulted in eroded stream banks, increased sedimentation, and incised stream channels. Water withdrawals for agriculture reduce instream flows and result in increased water temperatures. Nonnative species pose a threat to bull trout through potential hybridization, competition for resources, and predation.

RECOVERY GOALS AND OBJECTIVES

The goal of the bull trout recovery plan is to **ensure the long-term persistence of self-sustaining, complex, interacting groups of bull trout distributed throughout the species' native range, so that the species can be delisted.** To achieve this goal the following objectives have been identified for bull trout in the Lower Columbia Recovery Unit.

- Maintain current distribution of bull trout and restore distribution in previously occupied areas within the Lower Columbia Recovery Unit.

- Maintain stable or increasing trends in abundance of bull trout.

- Restore and maintain suitable habitat conditions for all bull trout life history stages and strategies.

- Conserve genetic diversity and provide opportunity for genetic exchange.

RECOVERY CRITERIA

Recovery criteria for the Lower Columbia Recovery Unit were established to assess whether actions are resulting in the recovery of bull trout in the basin. Recovery criteria identified for the Lower Columbia Recovery Unit are as follows.

1. **The recovered distribution of bull trout in the Lower Columbia Recovery Unit is unknown and considered a research need. Until additional information is obtained, at a minimum, the four existing local populations in the recovery unit need to be maintained.** Current

local populations are Rush and Pine creeks (Swift Creek Reservoir) and Cougar Creek (Yale Lake) in the Lewis Core Area; and the West Fork Klickitat River in the Klickitat Core Area. These local populations need to be maintained while studies are initiated to identify additional local populations. The establishment of additional local populations in the Lewis Core Area is essential for recovery. Potential local populations in the Lewis (*e.g.*, Speelyai, Rain, Ole creeks, Swift by-pass reach, and upper mainstem Lewis River) have already been identified and research should be directed at factors limiting reintroduction. Other potential sites within the Lewis Core Area which have, or could support suitable habitat conditions if restored should also be evaluated. While the White Salmon River is recognized as historic core habitat, and necessary for recovery, specific tributaries where local populations could occur is unknown. Similarly, additional spawning and rearing areas within the Klickitat River have not been identified. Studies in the White Salmon and Klickitat rivers should assess the potential habitat suitability and productive capacity of tributaries that could support local populations. Subsequently, factors that may limit the reintroduction potential should be identified, and corrective restoration activities or management actions should be implemented. Reestablishment of local populations within the White Salmon and Klickitat rivers may require the use of artificial propagation and would follow Federal policy and guidelines. The Lower Columbia Recovery Team recommends that studies be initiated to determine the effectiveness and feasibility of using fish transfers and hatcheries to assist in any future reintroduction efforts. Potential local populations should be identified within 3 years and actions needed to implement reintroduction efforts will be incorporated in the review of the Lower Columbia River Recovery Unit plan.

2. **Estimated abundance of bull trout among all local populations under a recovered condition in the Lower Columbia Recovery Unit is considered a research need.** Uncertainty surrounding the number of local populations under a recovered condition in each core area precluded determination of the recovered abundance estimate in the Lower Columbia

Recovery Unit. As more data is collected, recovered population estimates will be identified to more accurately reflect both the migratory and resident life history components. In determining the recovered abundance, consideration of genetic risk, effective population size, and connectivity need to be incorporated with habitat productivity estimates in order to determine achievable abundance goals.

3. **Adult bull trout exhibit a stable or increasing trend for at least two generations at or above the recovered abundance level within core areas.** The development of a standardized monitoring and evaluation program which would accurately describe trends in bull trout abundance is identified as a priority research need. As part of the overall recovery effort, the U.S. Fish and Wildlife Service will take the lead in addressing this research need by forming a multi-agency technical team to develop protocols necessary to evaluate trends in bull trout populations.

4. **Specific barriers to bull trout migration in the Lower Columbia Recovery Unit have been addressed.** The barriers that are identified as primary impediments to recovery, and where connectivity must be reestablished, are at Swift (Number 1 and 2) and Yale dams on the Lewis River; and Condit Dam on the White Salmon River. Identification of these barriers does not imply that other actions associated with passage (*e.g.*, culverts), habitat degradation, or nonnative species control are not crucial for recovery to occur.

The Lower Columbia Recovery Unit Team expects that the recovery process will be dynamic and will be refined as more information becomes available. Recovery criteria developed for bull trout address quantitative measurements of bull trout distribution and population characteristics. The recovery objectives were based on our current knowledge and may be refined as more information becomes available. Future adaptive management will play a major role in recovery implementation and refinement of recovery criteria. While removal of bull trout as a species under the Act (*i.e.*, delisting) can only occur for

the entity that was listed (Columbia River Distinct Population Segment), the recovery unit criteria listed above will be used to determine when the Lower Columbia Recovery Unit is fully contributing to recovery of the population segment.

ACTIONS NEEDED

Recovery for bull trout will entail reducing threats to the long-term persistence of populations and their habitats, ensuring the security of multiple interacting groups of bull trout, and providing habitat conditions and access to them that allow for the expression of various life-history forms. Specific tasks falling within seven categories of actions needed are discussed in Chapter 1, tasks specific to this recovery unit are provided in this chapter.

ESTIMATED COST OF RECOVERY

Total estimated cost of bull trout recovery in the Lower Columbia Recovery Unit is $8 million. This estimate does not include costs associated with capital improvements associated with recommended fish passage measures at Swift, Yale, Merwin, and Condit dams. Estimates for construction cost for passage at these facilities are an outcome of recommended actions. Total costs include estimates of expenditures by local, Tribal, State, and Federal governments and by private business and individuals. Cost estimates are not provided for tasks that are normal agency responsibilities under existing authorities. Successful recovery of bull trout in the Lower Columbia Recovery Unit is contingent on removing barriers, improving habitat conditions, and control of non-native species. These costs are attributed to bull trout conservation, but other aquatic species will also benefit.

ESTIMATED DATE OF RECOVERY

Time required to achieve recovery depends on bull trout status, factors affecting bull trout, implementation and effectiveness of recovery tasks, and responses to recovery tasks. A tremendous amount of work will be required to

restore impaired habitat, reconnect habitat, and eliminate threats from nonnative species. Three to five bull trout generations (15 to 25 years), or possibly longer, may be necessary before identified threats to the species can be significantly reduced and bull trout can be considered eligible for delisting. In the Lower Columbia Recovery Unit bull trout currently exist in very low numbers. Degradation and fragmentation of bull trout habitat have resulted in populations that are at high risk. Ultimately, these threats must be addressed in the near future if recovery will be achieved.